1. Ways of searching increase in stability of emulsion products to microbiological decay

Valeriya Ananieva[1], Irina Radzievska[2]
[1]*National Technical University «Kharkiv Polytechnic Institute», Kharkiv, Ukraine*
[2]*National University of Food Technology, Kyiv, Ukraine*

Introduction. Emulsion products is in great demand in Ukrainian the markets. The salads dressed with mayonnaise and various sauces, enter to food allowance practically of each family. Use by production of mayonnaise of sintetic preservatives considerably extends shelf-lifes but does this products not of the really useful. Use as nutritional supplements in emulsion products of powders from fruit and vegetable raw materials will allow not only to increase the biological value of mayonnaises and sauces Existence in composition of powders of vegetable raw materials of flavonoids with the expressed antifungal properties [1] can be influence microbiological indicators of finished goods positively.

Purpose of the study is definition of microbiological indexes of samples of the developed mayonnaise sauce with grapes skin powder (The Black Pearl variety) addition in number of 5,0% and without the content of powder. The offered quantity of grapes skin powder added to sauce is proved in the previous works.

Materials and methods. Microbiological indexes of mayonnaise sauce samples, namely quantity of mold and yeast fungi according to standards of operating normative documentation are defined. The method is based on seeding of a product in culture mediums and definition of belonging of the allocated microorganisms to yeast and mold fungi in compliance on the culture mediums growth and morphology of cages. Shelf-lifes of mayonnaise sauces samples according to requirements of normative documentation of DSTU 4487:2015 at corresponding temperatures make 30 days.

Results and discussion. By results of the conducted researches it is established that by the end of a shelf-life the growth of the colony units of yeast is considerably slowed down in an sample of mayonnaise sauce with grapes skin powder addition. The quantity of the colony units of a mold decreased slightly in comparison with a control sample (by 1,3 times). Presence at grapes skin powder of polyphenolic compound, quercetinum flavonoid which availability is confirmed with the pilot studies [2] influences the microbiological atmosphere of mayonnaise sauce. In particular, the product of oxidation of quercetinum, 3,4-dihydroxybenzoic acid has antifungal properties and shows high activity concerning fungal microorganisms.

Conclusion. Entry to compositions of emulsion products powders from fruit and vegetable raw materials with the high content of polyphenolic compounds, flavonoids, is expedient from the point of view of increase in protection of finished goods against premature microbiological decay. Availability of antifungal properties in above-mentioned compounds will allow to reduce considerably the content of sintetic preservatives or in general to make production with use of exclusively natural ingredients

Література

1. Örner, M.W, Jha, HC. (1993) Antifungal activity of flavonoids and their mixtures against different fungi occurring on grain. *Pestic. Sci., 38(4),* 347-351.

2. Ananieva V., Krichkovska, L., Belinska, A., Dubonosov, V., Petrov, S. (2016). Research of dry plant concentrates – ingredient of a food health improvement. *EUREKA: physics and engineering, 4 (5),* 17–25.